

**Commonwealth of Kentucky
Division for Air Quality**

PERMIT APPLICATION SUMMARY FORM

(For all sources except PSD and true minor sources)

Completed by: Bryan Handy

GENERAL INFORMATION:

Name: Grane Creek , LLC
Address: State Highway 2097, Henderson, Kentucky in Henderson County
Date application received: February 7, 2000
SIC/Source description: 4911/ Electric Generation
AFS(10-digit) Plant ID: 21-101-00131
Application log number: G549
Permit number: V-00-023

APPLICATION TYPE/PERMIT ACTIVITY:

<input checked="" type="checkbox"/> Initial issuance	<input type="checkbox"/> General permit
<input type="checkbox"/> Permit modification	<input type="checkbox"/> Conditional major
__Administrative	<input checked="" type="checkbox"/> Title V
__Minor	<input checked="" type="checkbox"/> Synthetic minor
__Significant	<input type="checkbox"/> Operating
<input type="checkbox"/> Permit renewal	<input checked="" type="checkbox"/> Construction/operating

COMPLIANCE SUMMARY:

<input type="checkbox"/> Source is out of compliance	<input type="checkbox"/> Compliance schedule included
<input type="checkbox"/> Compliance certification signed	

APPLICABLE REQUIREMENTS LIST:

<input type="checkbox"/> NSR	<input checked="" type="checkbox"/> NSPS	<input type="checkbox"/> SIP
<input type="checkbox"/> PSD	<input type="checkbox"/> NESHAPS	<input type="checkbox"/> Other
<input type="checkbox"/> Netted out of PSD/NSR	<input type="checkbox"/> Not major modification per 401 KAR 51:017, 1(2)(b) or 51:052,1(14)(b)	

MISCELLANEOUS:

☒ Acid rain source
☐ Source subject to 112(r)
☒ Source applied for federally enforceable emissions cap
☐ Source provided terms for alternative operating scenarios
☐ Source subject to a MACT standard
☐ Source requested case-by-case 112(g) or (j) determination
☐ Application proposes new control technology
☒ Certified by responsible official
☒ Diagrams or drawings included
☐ Confidential business information (CBI) submitted in application
☐ Pollution Prevention Measures
☐ Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	Actual (tpy)	Potential (tpy)
PM	128.9	128.9
SO ₂	26.74	26.74
NO _x	248.56	248.56
CO	210.16	210.16
VOC	14.01	14.01

SOURCE PROCESS DESCRIPTION:

The Grane Creek, LLC - Henderson Generating Station, is to include six (6) General Electric model PG7121 (EA) natural gas-fired combustion turbines which are to operate in simple cycle mode with a nominal output capacity of 85 megawatts (MW) each. The facility is to produce electricity during periods of peak electricity demand on a daily and seasonal basis.

EMISSION AND OPERATING CAPS DESCRIPTION:

The permit and source will be synthetic minor because potential emissions of greater than 250 tons per year are possible without the emissions caps being proposed for nitrogen oxides and carbon monoxide. The permittee has agreed to an emissions cap of 249 tons per year, based on any 12 consecutive months, for nitrogen oxides and 210.3 tons per year for carbon monoxide to preclude Regulation 401 KAR 51:017, Prevention of significant deterioration of air quality. The permittee may assure compliance for nitrogen oxides and carbon monoxide by use of continuous emission monitors or, while CEMs are not installed, by periodic monitoring, a calculation procedure based on EPA methods, and tracking of total emissions on a twelve (12) month rolling basis. While CEMs are not installed periodic monitoring for NO_x must be conducted in accordance with 40 CFR 75, Appendix E. These requirements include initial performance testing at four different load points, correlating lb/mmBtu results to heat input rate, and retesting prior to the earlier of 3,000 unit operating hours or the 5-year renewal and anniversary of each unit's operating permit. Additionally, while CEMs are not installed periodic monitoring for CO must also be conducted. Initial performance testing shall correlate lb/mmBtu results to heat input rate, and retesting will occur prior to the 5-year renewal and anniversary of each unit's operating permit. The permittee shall also continuously monitor the flue gas temperature at the inlet and outlet of the oxidation catalyst and within 15,000 unit operating hours, each catalyst shall be assessed through catalyst core samples and replaced as necessary.

Initially CEMs will not be installed on the combustion turbines because projected operating capacities for the turbines are below the levels required by 40 CFR 75. However, if a combustion turbine's operations exceed a capacity factor of 20 percent in any calendar year or exceed a capacity factor of 10 percent averaged over three years, the permittee shall install, certify, and operate CEMs

on that unit by December 31st the following calendar year. If natural gas fuel usage in the turbines exceeds 12,000 mmcf in a consecutive 12-month period, the permittee must have CEMs installed, certified, and operating on all six-combustion turbines. In addition, the permittee shall install, certify, and operate all required CEMs as necessary to comply with any new additional applicable regulations after issuance of the permit.

Sulfur content of natural gas fuel is being limited to the amount proposed in the application of 1.32 grain/100 SCF in order to preclude Regulation 401 KAR 51:017. This is necessary because the NSPS (40 CFR 60 Subpart GG) limitation of 0.8 weight percent sulfur in fuel would result in potential emissions greater than PSD thresholds.

Hazardous air pollutant (HAP) emissions are estimated to be less than 10 tons/year of a single one, and less than 25 tons/year of any combination of HAPs given the limitations necessary to maintain the emissions caps for nitrogen oxides and carbon monoxide, estimated for 2524 hours of operation, for each turbine; therefore, a case-by-case MACT is precluded.

Natural gas shall be the sole fuel fired in the turbines. All combustion turbines must be operated at 80% load or greater except during periods of startup, shutdown, and malfunction.